

REMARKS

This is a full and timely response to the final Office Action of September 15, 2003. Reexamination, reconsideration, and allowance of the application and all presently pending claims are respectfully requested.

Upon entry of this Second Response, claims 1-43 remain pending in this application, and claims 44 and 45 are newly added. It is believed that the foregoing amendments add no new matter to the present application.

Response to Drawing Objections

The drawings are objected to under 37 C.F.R. §1.83(a) as allegedly failing to show every feature of the invention specified in the claims. In this regard, it is alleged in the Office Action that the drawings fail to show “the plurality of faces in the graphical image” and “determining if one of the faces is close to a center and moving the face higher in the picture.” Applicant respectfully traverses the objections to the drawings.

In particular, Applicant asserts that the claims do not positively recite a graphical image having a plurality of faces. Rather, claim 36 positively recites the step of “detecting a plurality of faces in the graphical image.” In block 124 of Figure 7, a face may be detected. Further, this block is performed for each of the “face candidate windows” within a graphical image, as shown by blocks 123-126 with particular emphasis on block 126. Thus, noting that multiple “yes” determinations may occur in block 124 in multiple passes of blocks 123-126, Applicant submits that Figure 7 shows the feature of “detecting a plurality of faces” in a graphical image.

In addition, Figure 3 depicts a graphical image of a face 79 within a graphical image 73. Figure 5 depicts the graphical image 73 of Figure 3 after being cropped by an image cropper 21

in accordance with one embodiment of the present application. See page 4, lines 17-22, and page 11, lines 1-13. As can be seen by comparing Figures 3 and 5, the face 79 is moved higher in the graphical image 73 by the cropping. Accordingly, Applicant asserts that the drawings show the features of “determining if one of the faces is close to a center and moving the face higher in the picture.”

For at least the above reasons, Applicant asserts that the features allegedly missing from the drawings are, in fact, shown by the drawings. Accordingly, Applicant requests that the objections to the drawings be withdrawn.

Response to §102 Rejections

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. See, e.g., *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983).

Claim 1

Claim 1 presently stands rejected under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Claim 1 reads as follows:

1. A system for automatically cropping graphical images, comprising:
memory for storing digital data that defines a graphical image;
an object detector configured to perform a search of said digital data for an object of a particular type and to automatically identify, based on said search, a portion of said digital data that defines an image of an object of said particular type within said graphical image; and
an image cropper configured to automatically crop said digital data based on a position of said object image within said graphical image, said image cropper configured to determine said position of said object image within said graphical image based on said portion automatically identified by said object detector. (Emphasis added).

Applicant respectfully asserts that *Bollman* fails to disclose at least the features of claim 1 highlighted above. Therefore, *Bollman* is inadequate to reject claim 1 under 35 U.S.C. §102.

In maintaining the rejection of claim 1, it is asserted in the outstanding Office Action that:

“Applicant’s arguments filed 06/23/03 have been fully considered but they are not persuasive. Applicant argues on page 9 that reference fails to disclose ‘to perform a search of said digital data for an object of a particular type’. *Bollman* discloses in lines 4-5 that this is an automatic cropping of images. Therefore the process is automatic and the selecting of a particular region (column 1 lines 15-25) is automatic and this selecting is the same as a search of the digital data and the particular region is the same as an object of a particular type.”

Applicant respectfully disagrees. In this regard, *Bollman* appears to describe a method for automatically cropping images containing regions where intensity levels vary considerably. See Abstract. In particular, *Bollman* appears to divide an image into a plurality of blocks and to then determine the mean intensity level of each block. See column 3, lines 52-54, and column 4, lines 1-10. *Bollman* apparently then performs a statistical analysis to determine a threshold variance based on the variance distribution of the blocks. See column 4, lines 20-27. All blocks with a variance higher than this threshold are selected as “regions of interest.” Column 4, lines 26-28. In this manner, the foreground region can be distinguished from the background region, which can be removed via automatic cropping. See column 4, lines 28-32.

Therefore, *Bollman* distinguishes foreground regions from background regions but notably does not identify the objects within these regions. Indeed, *Bollman* appears to crop around a “region of interest” in the same manner regardless of the types of objects that are located within the “region of interest.” Thus, *Bollman* fails to disclose “an object detector configured to perform a search of said digital data for an object of a particular type,” as described by pending claim 1.

For at least the foregoing reasons, Applicant asserts that *Bollman* fails to disclose each element of claim 1, as amended, and the rejection of claim 1 under 35 U.S.C. §102 should, therefore, be withdrawn.

Claims 2-4, 6-8, and 23-25

Claims 2-4, 6-8, and 23-25 presently stand rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Applicant submits that the pending dependent claims 2-4, 6-8, and 23-25 contain all features of their respective independent claim 1. Since claim 1 should be allowed, as argued hereinabove, pending dependent claims 2-4, 6-8, and 23-25 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988). Furthermore, these dependent claims recite patentably distinct features and/or combinations of features that make them allowable, notwithstanding the allowability of their base claim 1.

As an example, claim 2 recites “wherein said object detector is configured to search said digital data for facial images.” Applicant respectfully asserts that such features are not disclosed by *Bollman*. In particular, as described above in the arguments for allowance of pending claim 1, *Bollman* identifies “regions of interest,” which correspond to foreground regions, and crops an image based on the identified “regions of interest” such that background regions are removed from the cropped image. Although the techniques disclosed in *Bollman* may be applied to portraits or other types of facial images, *Bollman* does not appear to determine whether an image being cropped contains a facial image. In this regard, *Bollman* appears to crop around an identified “region of interest” in the same manner regardless of whether the identified “region of interest” contains a facial image. Therefore, even though the techniques described in *Bollman* may be applied to portraits or other images containing facial images, *Bollman* does not actually

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“search... for facial images,” as described by pending claim 2. Accordingly, the 35 U.S.C. §102 rejection of this claim 2 is improper and should be withdrawn, notwithstanding the allowability of claim 1.

In addition, claim 23 recites “wherein said object detector is configured to make a determination as to whether said portion defines a facial image.” Applicant respectfully asserts ③ that *Bollman* fails to disclose such features. In this regard, it appears that the cropping techniques of *Bollman* may be used for portraits and other facial images. However, as described above in the arguments for allowance of claim 2, it appears *Bollman* crops around identified “regions of interest” in the same manner regardless of whether the identified “regions of interest” contain facial images, and there is nothing in *Bollman* to indicate that the alleged “object builder” actually makes a determination as to whether the image being cropped “defines a facial image,” as described by claim 23. Therefore, *Bollman* fails to disclose each feature recited by claim 23, and the 35 U.S.C. §102 rejection of this claim is improper and should be withdrawn, notwithstanding the allowability of claim 1.

Also, claim 24 recites “wherein said image cropper is configured to automatically crop said digital data such that said object image is removed from said graphical image.” For at least the reasons set forth hereinbelow in the arguments for allowance of claim 5, Applicant asserts that *Bollman* fails to disclose the recited features of claim 24. Accordingly, the rejection of claim 24 under 35 U.S.C. §102 is improper and should be withdrawn, notwithstanding the allowability of claim 1.

Claim 5

Claim 5 presently stands rejected under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Claim 5 reads as follows:

5. A system for automatically cropping graphical images, comprising:
memory for storing digital data that defines a graphical image;
an object detector configured to analyze said digital data and to
automatically identify a graphical object within said graphical image; and
an image cropper configured to automatically crop said digital data
based on a position of said graphical object within said graphical image such
that said graphical object is removed from said graphical image. (Emphasis added).

Applicant respectfully asserts that *Bollman* fails to disclose at least the features of claim 5 highlighted above. Therefore, *Bollman* is inadequate to reject claim 5 under 35 U.S.C. §102.

As set forth hereinabove in the arguments for allowance of claim 1, *Bollman* identifies “regions of interest” and removes regions outside of the “regions of interest.” However, there is nothing in *Bollman* to indicate that a “graphical object” in a removed region (*i.e.*, in a region outside of the “regions of interest”) is “identified.” Indeed, while the cropping performed by *Bollman* is based on the location and size of a “region of interest,” it does not appear that such cropping is affected by parameters (*e.g.*, location, size, *etc.*) of a “graphical object” outside of a “region of interest.” Thus, *Bollman* provides no reason or motivation for identifying a “graphical object” that is within a removed region (*i.e.*, a region outside of a “region of interest”). Accordingly, Applicant asserts that *Bollman* fails to disclose at least the features of claim 5 highlighted hereinabove. (4)

For at least the foregoing reasons, Applicant submits that *Bollman* fails to disclose each feature of claim 5. Accordingly, the 35 U.S.C. §102 rejection of claim 5 is improper and should be withdrawn.

Claim 9

Claim 9 presently stands rejected under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Claim 9 reads as follows:

9. A system for automatically cropping graphical images, comprising:
memory for storing digital data that defines a graphical image;
means for performing a search of said digital data for an object of a particular type and for automatically identifying, based on said search, a portion of said digital data that defines an image of an object of said particular type within said graphical image; and
means for automatically cropping said digital data based on a position of said object image within said graphical image, said cropping means configured to determine said position of said object image within said graphical image based on said portion automatically identified by said identifying means.
(Emphasis added).

For at least the reasons set forth above in the arguments for allowance of claim 1, Applicant submits that *Bollman* fails to disclose at least the features of claim 9 highlighted hereinabove.

Thus, the 35 U.S.C. §102 rejection of claim 9 should be withdrawn.

Claims 10-15

Claims 10-15 presently stand rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Applicant submits that the pending dependent claims 10-15 contain all features of their respective independent claim 9. Since claim 9 should be allowed, as argued hereinabove, pending dependent claims 10-15 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Furthermore, these dependent claims recite patentably distinct features and/or combinations of features that make them allowable, notwithstanding the allowability of their base claim 9.

As an example, claim 10 recites “wherein said identifying means is configured to search said digital data for facial images.” For at least the reasons set forth hereinabove in the arguments for allowance of claim 2, Applicant submits that *Bollman* fails to disclose at least the

foregoing features of claim 10. Thus, the rejection of claim 10 is improper and should be withdrawn, notwithstanding the allowability of claim 9.

In addition, claim 13 recites “wherein said cropping means crops said digital data based on said position of said object image such that said object image is completely removed from said graphical image.” For at least the reasons set forth above in the arguments for allowance of claim 5, Applicant asserts that *Bollman* fails to disclose at least the foregoing features of claim 13, and the rejection of this claim under 35 U.S.C. §102 is, therefore, improper and should be withdrawn, notwithstanding the allowability of claim 9.

Claim 16

Claim 16 presently stands rejected under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Claim 16 reads as follows:

16. A method for automatically cropping graphical images, comprising the steps of:
storing digital data that defines a graphical image;
automatically searching said digital data for an object of a particular type;
identifying, based on said searching step, a portion of said digital data that defines an image of an object of said particular type;
determining, based on said identified portion, a position of said object image within said graphical image; and
automatically cropping said digital data based on said position of said object image. (Emphasis added).

For at least the reasons set forth above in the arguments for allowance of claim 1, Applicant submits that *Bollman* fails to disclose at least the features of claim 16 highlighted hereinabove. Thus, the 35 U.S.C. §102 rejection of claim 16 should be withdrawn.

Claims 17-22 and 27-29

Claims 17-22 and 27-29 presently stand rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Applicant submits that the pending dependent claims 17-22 and 27-29 contain all features of their respective independent claim 16. Since claim 16 should be allowed, as argued hereinabove, pending dependent claims 17-22 and 27-29 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988). Furthermore, these dependent claims recite patentably distinct features and/or combinations of features that make them allowable, notwithstanding the allowability of their base claim 16.

As an example, claim 20 recites “removing, via said cropping step, said object image from said graphical image.” For at least the reasons set forth hereinabove in the arguments for allowance of claim 5, Applicant submits that *Bollman* fails to disclose at least the foregoing features of claim 20. Thus, the rejection of claim 20 is improper and should be withdrawn, notwithstanding the allowability of claim 16.

In addition, claim 21 recites “wherein said searching and cropping steps are automatically performed in response to said storing step.” In rejecting claim 21, it is asserted in the Office Action that the features of claim 21 are described at column 2, lines 55-65 of *Bollman*. The cited section of *Bollman* discloses that automatic cropping may be performed in various devices, such as a digital camera. See column 2, lines 55-65. However, there is nothing in *Bollman* to indicate that the described cropping is automatically performed when an image is captured by the digital camera or when digital data defining a graphical image is otherwise stored. Thus, Applicant asserts that the Office Action fails to establish that *Bollman* discloses each of the

recited features of claim 21, and the rejection of this claim under 35 U.S.C. §102 should, therefore, be withdrawn, notwithstanding the allowability of claim 16.

Also, claim 27 recites the step of “enabling a user to select the type of automatic cropping to be performed in said cropping step.” In rejecting claim 27, it is asserted in the Office Action that the features of claim 27 are disclosed by *Bollman* at column 1, lines 54-57. The cited section of *Bollman* reads as follows:

“The present invention relates to a method for the automatic cropping of images. Further, the present invention relates to a method for automatically cropping images that are texture-free, or relatively texture-free, to their regions of interest.”

There is absolutely nothing in the foregoing section of *Bollman* to indicate that a user may select the type of automatic cropping to be performed. The foregoing section of *Bollman* merely specifies the type of images (*i.e.*, “texture-free” or “relatively texture-free”) on which *Bollman*’s cropping methodology may be performed. There is nothing in *Bollman* to indicate that another cropping methodology may be selected by a user if an image does not meet the criteria specified at column 1, lines 54-57. Accordingly, the Office Action fails to establish that *Bollman* discloses the recited features of claim 27, and the rejection of this claim should be withdrawn, notwithstanding the allowability of claim 16.

Furthermore, claim 28 recites the step of “making a determination as to whether said object image is a facial image.” For at least the reasons set forth hereinabove in the arguments for allowance of claim 23, Applicant submits that *Bollman* fails to disclose at least the foregoing features of claim 28. Thus, the rejection of claim 28 is improper and should be withdrawn, notwithstanding the allowability of claim 16.

In addition, claim 29 recites the step of “removing said object image from said graphical image if said determination indicates that said object image is a facial image.” As set forth hereinabove in the arguments for allowance of claim 23, *Bollman*’s methodology does not

appear to determine whether identified “regions of interest” of an image being cropped contain a facial objects. For at least this reason, Applicant asserts that *Bollman* fails to disclose the features recited by claim 29. Thus, the rejection of claim 29 is improper and should be withdrawn, notwithstanding the allowability of claim 16.

Claim 26

Claim 26 presently stands rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Applicant submits that the pending dependent claim 26 contains all features of its respective independent claim 5. Since claim 5 should be allowed, as argued hereinabove, pending dependent claim 26 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Claim 30

Claim 30 presently stands rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Claim 30 presently reads as follows:

30. A system for automatically cropping graphical images, comprising:
memory for storing digital data that defines a graphical image;
***an object detector configured to make a determination as to whether a
portion of said digital data defines a facial image;*** and
an image cropper configured to automatically crop said digital data based
on said determination. (Emphasis added).

For at least the reasons set forth hereinabove in the arguments for allowance of claim 23, Applicant submits that *Bollman* fails to disclose at least the features of claim 30 highlighted hereinabove. Thus, the rejection of claim 30 is improper and should be withdrawn, notwithstanding the allowability of claim 16.

Claims 31 and 32

Claims 31 and 32 presently stand rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Applicant submits that the pending dependent claims 31 and 32 contain all features of their respective independent claim 30. Since claim 30 should be allowed, as argued hereinabove, pending dependent claims 31 and 32 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988). Furthermore, these dependent claims recite patentably distinct features and/or combinations of features that make them allowable, notwithstanding the allowability of their base claim 30.

As an example, claim 32 recites “wherein said image cropper is configured to automatically crop said digital data such that said facial image is removed from said graphical image.” *Bollman* appears to describe a cropping methodology where the backgrounds of “images with uniform backgrounds” are removed. See column 1, lines 15-25, and 45-50. As noted by the Office Action, *Bollman*’s cropping methodology may be used to crop portraits and passports. However, in such embodiments, the facial image allegedly detected by *Bollman* is not removed from the cropped image. Indeed, nothing in *Bollman* indicates that a detected facial image is removed from the image being cropped. Accordingly, Applicant asserts that *Bollman* fails to disclose of the aforementioned features of claim 32, and the rejection of claim 32 should be withdrawn, notwithstanding the allowability of claim 30.

Claim 33

Claim 33 presently stands rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Claim 33 presently reads as follows:

33. A method for automatically cropping graphical images, comprising the steps of:
storing digital data that defines a graphical image;
determining whether a portion of said digital data defines a facial image; and
automatically cropping said digital data based on said determining step.
(Emphasis added).

For at least the reasons set forth hereinabove in the arguments for allowance of claim 23, Applicant submits that *Bollman* fails to disclose at least the features of claim 33 highlighted hereinabove. Thus, the rejection of claim 33 is improper and should be withdrawn, notwithstanding the allowability of claim 16.

Claims 34 and 35

Claims 34 and 35 presently stand rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Bollman*. Applicant submits that the pending dependent claims 34 and 35 contain all features of their respective independent claim 33. Since claim 33 should be allowed, as argued hereinabove, pending dependent claims 34 and 35 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988). Furthermore, these dependent claims recite patentably distinct features and/or combinations of features that make them allowable, notwithstanding the allowability of their base claim 33.

As an example, claim 35 recites “wherein said cropping step comprises the step of removing said facial image from said graphical image.” For at least the reasons set forth hereinabove in the arguments for allowance of claim 32, Applicant submits that *Bollman* fails to

disclose at least the foregoing features of claim 35. Thus, the rejection of claim 35 is improper and should be withdrawn, notwithstanding the allowability of claim 33.

Claim 36

Claim 36 presently stands rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Niyogi* (U.S. Patent No. 6,144,755). Claim 36 presently reads as follows:

36. A method for cropping a graphical image, comprising the steps of:
detecting a plurality of faces in the graphical image;
determining if one of the faces is close to a center of the graphical image;
and
automatically cropping the graphical image. (Emphasis added).

Applicant submits that the cited art fails to disclose at least the features of claim 36 highlighted hereinabove.

In this regard, *Niyogi* appears to describe a system that monitors a head position of a subject (*e.g.*, a driver) so that processing circuitry can determine whether a hazard condition is present based on the subject's head position and alert the subject if a hazard condition is indeed present. See column 2, line 66, through column 3, line 21. Further, to capture head position information, a camera periodically takes a sample image of the subject. Each of the sample images is then compared to predefined images stored in a tree structure to determine the "pose" of the subject, and the determined "pose" of the subject is apparently used to determine whether a hazard condition exists. See Abstract and column 2, line 66, through column 3, line 21. *Niyogi* apparently crops the sample images via a cropping window, and the cropping window is positioned so that the subject is centered in the cropping window. See column 4, lines 21-30.

However, there is nothing in *Niyogi* to indicate that any of the cropped sample images contains "a plurality of faces." In fact, *Niyogi* specifically suggests limiting each of the sample

images to the face of the subject or "other portions of the subject." See column 2, line 66, through column 3, line 5. Therefore, *Niyogi* fails to disclose each of the features of claim 36 highlighted hereinabove. Accordingly, the 35 U.S.C. §102 rejection of claim 36 should be withdrawn.

Claims 37-40 and 45

Claims 37-40 presently stand rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Niyogi*. Further, claim 45 has been newly added via the amendments set forth herein. Applicant submits that the pending dependent claims 37-40 and 45 contain all features of their respective independent claim 36. Since claim 36 should be allowed, as argued hereinabove, pending dependent claims 37-40 and 45 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Claim 41

Claim 41 presently stands rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Niyogi*. Claim 41 presently reads as follows:

41. A method for cropping a graphical image, comprising the steps of:
detecting a face in a digital image of a picture; and
automatically cropping the digital image based on a size of the face relative to the digital image. (Emphasis added).

Applicant submits that the cited art fails to disclose at least the features of claim 41 highlighted hereinabove.

In this regard, as described above in the arguments for allowance of claim 36, *Niyogi* appears to position a cropping window with respect to a sample image such that a subject's face is centered in the cropping window. To center a face in the cropping window, *Niyogi* moves the

cropping window based on a *position* of the subject's face within a cropped image. See column 4, lines 21-46. However, there is nothing in *Niyogi* to indicate that positioning of the cropping window is based on the size of the subject's face "relative to the digital image" that contains the face. Therefore, Applicant asserts that *Niyogi* fails to disclose at least the features of claim 41 highlighted hereinabove. (5)

In addition, Applicant submits that *Niyogi* does not appear to detect a face in a digital image and crop this same digital image based on the detected face. In particular, *Niyogi* detects the position of a subject's face in a first sample image and, based on the detected position, moves the cropping window 410 "in order to center the face *for the next sample image*." (Emphasis added). See column 4, lines 21-46. Therefore, a subject's face is detected in one sample image, and the detection of the face is used to crop a *different* sample image. 10

Accordingly, *Niyogi* fails to disclose the steps of "detecting a face in a digital image of a picture" and "automatically cropping the digital image based on a size of *the* face relative to *the* digital image," as described by claim 41. (Emphasis added).

For at least the foregoing reasons, Applicant asserts that *Niyogi* fails to disclose each feature recited by claim 41. Accordingly, the 35 U.S.C. §102 rejection of claim 41 is improper and should be withdrawn.

Claims 42-44

Claims 42 and 43 presently stand rejected in the Office Action under 35 U.S.C. §102 as allegedly being anticipated by *Niyogi*. Further, claim 44 has been newly added via the amendments set forth herein. Applicant submits that the pending dependent claims 42-44 contain all features of their respective independent claim 41. Since claim 41 should be allowed,

as argued hereinabove, pending dependent claims 42-44 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

CONCLUSION

Applicant respectfully requests that all outstanding objections and rejections be withdrawn and that this application and all presently pending claims be allowed to issue. If the Examiner has any questions or comments regarding Applicant's response, the Examiner is encouraged to telephone Applicant's undersigned counsel.

Respectfully submitted ,

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